



Atmospheric motion vectors height assignment techniques using Meteosat Seconde Generation

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Atmospheric Motion Vectors (AMVs) are one of the most important products generally derived from all geostationary satellites, because they constitute a very important part of the observation data fed to Numerical Weather Prediction models. The height assignment (HA) is currently the most challenging task in the AMV extraction scheme. Several sources of error can be introduced at the height assignment step, including the sensitivity of the HA methods themselves. But one of the main difficulties is to clearly identify the pixels that drive the tracking process in the tracer box, in order to use them for the HA calculation. The most common method sorts the coldest pixels to calculate the height. Then NOAA/NESDIS uses a fix threshold of 25% coldest pixels for GOES instrument, whereas EUMETSAT uses the coldest cluster inside the target area for Meteosat 8. In the EUMETSAT AMV HA scheme the separation of the clusters is based on two output parameters of the Cloud Analysis (CLA) step: the cloud phase and the cloud top height (CTH). Unfortunately, the use of these criteria may induce a large error into the calculation of the pressure, especially in tricky multilevel cloudy situations, or/and when several types of clouds are present together in the target box. This presentation shows example of such error, and the benefits of using several percentages of the coldest cloudy pixels present in the target area.